

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims:

1. (Currently Amended) A method of reducing the viscosity of a viscosified treatment fluid comprising contacting the viscosified treatment fluid in a subterranean formation with an acid generated from an orthoester composition that comprises an orthoester.

2. (Original) The method of claim 1 wherein the orthoester has the general formula $RC(OR')(OR'')(OR''')$, wherein R' , R'' , and R''' are not hydrogen, and R' , R'' , and R''' may or may not be the same group.

3. (Original) The method of claim 2 wherein R' , R'' , or R''' comprise a heteroatom.

4. (Original) The method of claim 3 wherein the heteroatom is nitrogen or oxygen.

5. (Currently Amended) The method of claim 1 wherein the orthoester ~~comprises an orthoacetate, an orthoformate, or an orthopropionate~~ is selected from the group consisting of orthoacetates, orthoformates, orthopropionates, and combinations thereof.

6. (Original) The method of claim 1 wherein the orthoester comprises an orthoester of a polyfunctional alcohol.

7. (Original) The method of claim 1 wherein the orthoester comprises a poly(orthoester).

8. (Original) The method of claim 1 wherein the viscosified treatment fluid is a fracturing fluid or a gravel pack fluid.

9. (Original) The method of claim 1 wherein the viscosified treatment fluid comprises a gelling agent that comprises a hydratable polymer.

10. (Original) The method of claim 1 wherein the viscosified treatment fluid comprises a crosslinked polysaccharide.

11. (Original) The method of claim 1 wherein at least a portion of the orthoester composition is coated or impregnated onto particulates to form coated particulates or impregnated particulates.

12. (Currently Amended) The method of claim 11 wherein the particulates ~~comprise~~ are selected from the group consisting of natural sand, quartz sand, particulate garnet, glass, ground walnut hulls, polymeric pellet, bauxite, or a ceramic ceramics, and combinations thereof.

13. (Original) The method of claim 11 wherein the particulates are in a size range from about 4 to about 100 US mesh.

14. (Original) The method of claim 11 wherein the particulates are in a size range from about 10 to about 70 US mesh.

15. (Original) The method of claim 11 wherein the orthoester is coated onto the particulates using an on-the-fly method.

16. (Original) The method of claim 11 wherein the orthoester is coated onto the particulates in a batch process.

17. (Original) The method of claim 1 wherein the orthoester composition comprises water.

18. (Original) The method of claim 17 wherein the water is present in an amount from about 2 moles of water for about every 1 mole of orthoester to an excess of water.

19. (Original) The method of claim 1 wherein the orthoester composition or the viscosified treatment fluid comprises an inhibitor.

20. (Original) The method of claim 1 wherein the orthoester composition is in a solution form, a gel form, or an emulsion form.

21. (Original) The method of claim 1 wherein the viscosity of the viscosified treatment fluid is reduced after a desired delay period.

22. (Currently Amended) A method of reducing the pH of a viscosified treatment fluid comprising:

providing an orthoester composition that comprises an orthoester;

contacting the viscosified treatment fluid in a subterranean formation with the orthoester composition;

allowing the orthoester to generate a generated acid; and

allowing the generated acid to at least partially reduce the pH of the viscosified treatment fluid.

23. (Original) The method of claim 22 wherein the orthoester has the general formula $RC(OR')(OR'')(OR''')$, wherein R' , R'' , and R''' are not hydrogen, and R' , R'' , and R''' may or may not be the same group.

24. (Original) The method of claim 23 wherein R' , R'' , or R''' comprise a heteroatom.

25. (Original) The method of claim 24 wherein the heteroatom is nitrogen or oxygen.

26. (Currently Amended) The method of claim 22 wherein the orthoester ~~comprises an orthoacetate, an orthoformate, or an orthopropionate~~ is selected from the group consisting of orthoacetates, orthoformates, orthopropionates, and combinations thereof.

27. (Original) The method of claim 22 wherein the orthoester comprises an orthoester of a polyfunctional alcohol.

28. (Original) The method of claim 22 wherein the orthoester comprises a poly(orthoester).

29. (Currently Amended) The method of claim ~~1~~22 wherein the viscosified treatment fluid is a fracturing fluid or a gravel pack fluid.

30. (Currently Amended) The method of claim ~~1~~22 wherein the viscosified treatment fluid comprises a gelling agent that comprises a hydratable polymer.

31. (Currently Amended) The method of claim ~~1~~22 wherein the orthoester composition comprises water.

32. (Currently Amended) The method of claim ~~17~~31 wherein the water is present in an amount from about 2 moles of water for about every 1 mole of orthoester to an excess of water.

33. (Original) A method of fracturing a subterranean formation comprising:
contacting the subterranean formation with a fracturing fluid at a pressure sufficient to create or enhance at least one fracture in the subterranean formation;
contacting the fracturing fluid with an orthoester composition comprising an orthoester;
allowing the orthoester to generate a generated acid;
allowing the viscosity of the fracturing fluid to decrease; and

removing at least a portion of the fracturing fluid from the subterranean formation.

34. (Original) The method of claim 33 wherein the orthoester has the general formula $RC(OR')(OR'')(OR''')$, wherein R' , R'' , and R''' are not hydrogen, and R' , R'' , and R''' may or may not be the same group.

35. (Original) The method of claim 34 wherein R' , R'' , or R''' comprise a heteroatom.

36. (Original) The method of claim 33 wherein the orthoester comprises an orthoester of a polyfunctional alcohol.

37. (Original) The method of claim 33 wherein the orthoester composition or the fracturing fluid comprises an inhibitor that is capable of interacting with the generated acid so as to delay the reduction of the viscosity of the fracturing fluid.

38. (Currently Amended) The method of claim 37 wherein the inhibitor ~~comprises~~ is selected from the group consisting of sodium hydroxide, potassium hydroxide, ~~an amine~~ amines, sodium carbonate, or a combination and combinations thereof.

39. (Original) The method of claim 33 wherein at least a portion of the orthoester composition is coated or impregnated onto particulates to form coated particulates or impregnated particulates.

40. (Currently Amended) The method of claim 39 wherein the particulates ~~comprise~~ are selected from the group consisting of natural sand, quartz sand, particulate garnet, glass, ground walnut hulls, polymeric pellet, bauxite, or a ceramic ceramics, and combinations thereof.

41. (Original) A method of creating a gravel pack in a well bore comprising:
placing a gravel pack fluid comprising gravel particulates into a portion of the well bore so as to create a gravel pack;
contacting the gravel pack fluid with an orthoester composition comprising an orthoester;
allowing the orthoester to generate a generated acid;
allowing the viscosity of the gravel pack fluid to decrease; and
removing at least a portion of the gravel pack fluid from the subterranean formation.

42. (Original) The method of claim 41 wherein the orthoester has the general formula $RC(OR')(OR'')(OR''')$, wherein R' , R'' , and R''' are not hydrogen, and R' , R'' , and R''' may or may not be the same group.

43. (Original) The method of claim 42 wherein R' , R'' , or R''' comprise a heteroatom.

44. (Original) The method of claim 41 wherein the orthoester comprises an orthoester of a polyfunctional alcohol.

45. (Original) The method of claim 41 wherein the orthoester composition or the gravel pack fluid comprises an inhibitor that is capable of interacting with the generated acid so as to delay the reduction of the viscosity of the fracturing fluid.

46. (Currently Amended) The method of claim 45 wherein the inhibitor ~~comprises~~ is selected from the group consisting of sodium hydroxide, potassium hydroxide, an amine amines, sodium carbonate, or a combination and combinations thereof.

47. (Original) The method of claim 41 wherein at least a portion of the orthoester composition is coated or impregnated onto the gravel particulates to form coated gravel particulates or impregnated gravel particulates.

48. (Currently Amended) The method of claim 47 wherein the gravel particulates ~~comprise~~ are selected from the group consisting of natural sand, quartz sand, particulate garnet, glass, ground walnut hulls, polymeric pellet, bauxite, or a ceramic ceramics, and combinations thereof.

49. - 68. (Cancelled)

69. (New) A method of reducing the viscosity of a viscosified treatment fluid comprising contacting the viscosified treatment fluid with an acid generated from an orthoester composition that comprises an orthoester wherein the viscosified treatment fluid comprises a crosslinked polysaccharide.